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Dated: May 18, 2009
Electronic Signature for Gregory M. Reilly: /Gregory M. Reilly/

Docket No.: GROTH 3.3-036
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Hans-Olof Backlund

Application No.: 10/509,981

Group Art Unit: 2894

Filed: April 22, 2005

Examiner: D. E. Graybill

For: A METHOD AND A DEVICE FOR
MEASURING STRESS FORCES IN
REFINERS

REPLY BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Madam:

The present Reply Brief is submitted pursuant to 37 C.F.R. § 41.41, in response to the Examiner's Answer mailed March 18, 2009.

**I. BANKES DOES NOT MEASURE STRESS FORCES IN TWO
DIFFERENT DIRECTIONS IN THE PLANE OF THE
MEASURING SURFACE (OR STRESS MEASURING MEMBER)**

As argued in the Appeal Brief (in sections VII(A)(1)(i) and VII(A)(2)(i)), *Bankes* does not measure stress forces in two different directions in the plane of the measuring surface (or stress measuring member), as recited in independent claims 22 and 30. In the Examiner's Answer, the Examiner contended that *Bankes* discloses measuring "all forces, 'any force,' including the claimed forces." (Examiner's Answer 12.) In support of his contention, the Examiner quoted language from *Bankes* and mischaracterized it as a teaching of the claimed subject matter. For example, on page 4 of the Examiner's Answer, the Examiner reproduced the following language from *Bankes*: "Use of at least two sensor elements will permit . . . shear . . . forces to be resolved." This quotation is misleading because it suggests that *Bankes* teaches resolving

multiple shear forces. However, the actual language from *Bankes* (with the missing portions underlined) is: "Use of at least two sensor elements will permit both shear and normal forces to be resolved." (*Bankes* col.6 11.54-55 (emphasis added).) This latter quotation accurately characterizes the disclosure of *Bankes*, which teaches a force sensor that measures both the normal force and the shear force acting on a refiner bar (where the shear force is along the left-right direction of FIG. 2).

Anticipation is based on a factual inquiry into whether the reference discloses every feature of the claim and sufficiently places the claimed invention in possession of a person of ordinary skill in the art. *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994). It is not a linguistic exercise to see if language from the reference, when taken out of context and standing alone, appears on its face to encompass the recitations of a pending claim (as was done by the Examiner in this case).

None of the Examiner's quotations from *Bankes* support the conclusion that *Bankes* discloses measuring shear forces in two dimensions. This is because, as stated above and as stated in the Appeal Brief, *Bankes* simply does not teach measuring shear forces in two different directions in the plane of the measuring surface (or stress measuring member), as recited in the claims. Indeed, referring to the graphs in FIGS. 17A-18B, *Bankes* only measures one scalar quantity for "Normal Force" and one scalar quantity for "Shear Force."

Furthermore, the device in *Bankes* is not even constructed to measure shear forces in two dimensions. Therefore, *Bankes* certainly does not teach measuring shear forces in two dimensions. Referring to FIGS. 2, 3A, and 3B of *Bankes*, the four piezo electric sensor elements 26 are arranged to measure shear force in one dimension (i.e., in the left-right direction of FIG. 2) and normal force in one dimension (i.e., in the up-down direction of FIG. 2). That is, the piezo electric sensor elements 26 measure the magnitude of the reaction force

at each sensor element 26 location. (See *Bankes* col.12 ll.34-42.) Thus, a pure normal force applied perpendicular to the refining face 16 (including sensor head 32), for example in the downward direction in FIG. 2, will induce a compressive force applied to both of the lower piezo electric sensor elements 26 and an equal tensile force applied to both of the upper piezo electric sensor elements 26. A pure shear force applied parallel to the refining face 16, for example, towards the right in FIG. 2, will cause compression in the lower right and upper left piezo electric sensor elements 26 and tension in the lower left and upper right piezo electric sensor elements 26. From this information, "[t]he applied normal and shear forces can be determined by measuring and processing the electric signals from each of the piezo sensor elements 26 using appropriate signal conditioning equipment and data analysis." (*Bankes* col.12 ll.39-42.)

However, the device of *Bankes* is not constructed to measure shear force in a second dimension (e.g., along an axis into and out of the page of FIG. 2). In this regard, it was argued in the Appeal Brief that *Bankes* does not disclose or suggest, for example, arranging piezo electric sensor elements 26 at different locations in a plane parallel to the refining face 16 in order to measure stress forces in two different directions in the plane of the measuring surface and in order to determine the magnitude and direction of the stress forces in that plane. (See Appeal Brief 8.) In response, the Examiner stated that "[t]his assertion is respectfully deemed unpersuasive because the scope of the claims is not so limited, and *Bankes* is not necessarily relied on for this disclosure." (Examiner's Answer 12.) However, the above assertion is not related to the scope of the claims. The assertion is simply further support for the fact that *Bankes* does not teach the

relevant claim feature because, not only does the specification of *Bankes* fail to explicitly disclose measuring shear forces in two dimensions (as stated above), the device of *Bankes* is not even constructed to measure shear forces in two dimensions.

**II. THE MEASURING SURFACE OF BANKES DOES NOT
INCLUDE AT LEAST A PORTION OF AT LEAST A PAIR OF BARS**

As argued in the Appeal Brief (in sections VII(A)(1)(ii) and VII(A)(2)(ii)), the measuring surface of *Bankes* does not include at least a portion of at least a pair of bars, as also recited in independent claims 22 and 30.

None of the language quoted by the Examiner supports the conclusion that *Bankes* discloses "a measuring surface . . . including at least a portion of at least a pair of said plurality of bars" (emphasis added). Indeed, as quoted by the Examiner, the specification of *Bankes* repeatedly states that "the sensor head replaces all or a portion of the refiner bar." (See, e.g., *Bankes* col.4 11.1-2.) The other two quotations by the Examiner, i.e., "[M]easuring force acting on one or more refiner bars . . . [P]roviding two or more force sensors on one or more refiner bars . . ." (Examiner's Answer 13.), are taken from claim 37 of *Bankes*. (See *Bankes* col.17 11.15-16 and col.18 11.1-2.) This claim language is consistent with the statements in the specification that "a single force sensor or an array of force sensors can be employed." (*Bankes* col.4 11.47-48.) However, as argued in the Appeal Brief, the statement that "an array of force sensors can be employed," where each force sensor includes a sensor head 32 replacing a portion of one refiner bar or all of one refiner bar, cannot be considered to disclose a measuring surface "including at least a portion of at least a pair of . . . bars." (See Appeal Brief 9.) At best, such an array would result in multiple measuring surfaces, where each measuring surface includes a portion of one bar.

Furthermore, the Examiner's statement on page 13 of the Examiner's Answer that "the scope of claim 22 encompasses wherein the portion comprises only one bar because one bar is at least a portion of at least a pair of said plurality of bars" is nonsensical. Such an interpretation is not consistent with the "broadest reasonable construction in light of the specification." See *Phillips v. AWH Corp.*, 415 F.3d 1303, 1316 (Fed. Cir. 2005) ("The Patent and Trademark Office . . . determines the scope of claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction 'in light of the specification as it would be interpreted by one of ordinary skill in the art.'" (quoting *In re Am. Acad. Of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004)) (emphasis added).) Furthermore, by reading one bar to be at least a portion of at least a pair of a plurality of bars, the Examiner improperly vitiates the above claim language by effectively reading the word "pair" out of the claim.

III. CONCLUSION

For the reasons set forth above and for the reasons set forth in the Appeal Brief, this honorable Board should reverse the rejections of claims 22, 24-32, and 34-42.

Dated: May 18, 2009

Respectfully submitted,

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